Integrating Air Quality, Energy Efficiency and Renewable Energy in Texas

Texas Air Quality Issue:

Failure to meet federal ozone standards in urban areas: Houston, Dallas, Port Arthur

Houston Air Quality Plan

- Adopted in December, 2000
- Attainment required by 2007
- Most stringent NOx requirements in nation
- 80-90% reductions from industrial point sources
- State Plan for ground level ozone required additional rules for EE and new technology

Energy Efficiency and Renewable Programs

- Senate Bill 7, *enacted in 1999*
- Senate Bill 5, *enacted in 2001*

Senate Bill 7-Electric Restructuring Act

- Requires at least 10% reduction of electric utilities growth in demand by Jan. 1, 2004 and each year thereafter

- Requires 2000 megawatts of renewable energy

Senate Bill 5—The Texas Emissions Reduction Plan

- Includes grants for cleaner diesel engines and fuels and grants for energy efficiency programs
- Requires uniform energy efficiency provisions in building codes
- Requires each political subdivision to establish a goal of 5% annual reduction in energy consumption. Requirement to submit an annual report demonstrating how the goal is being achieved.

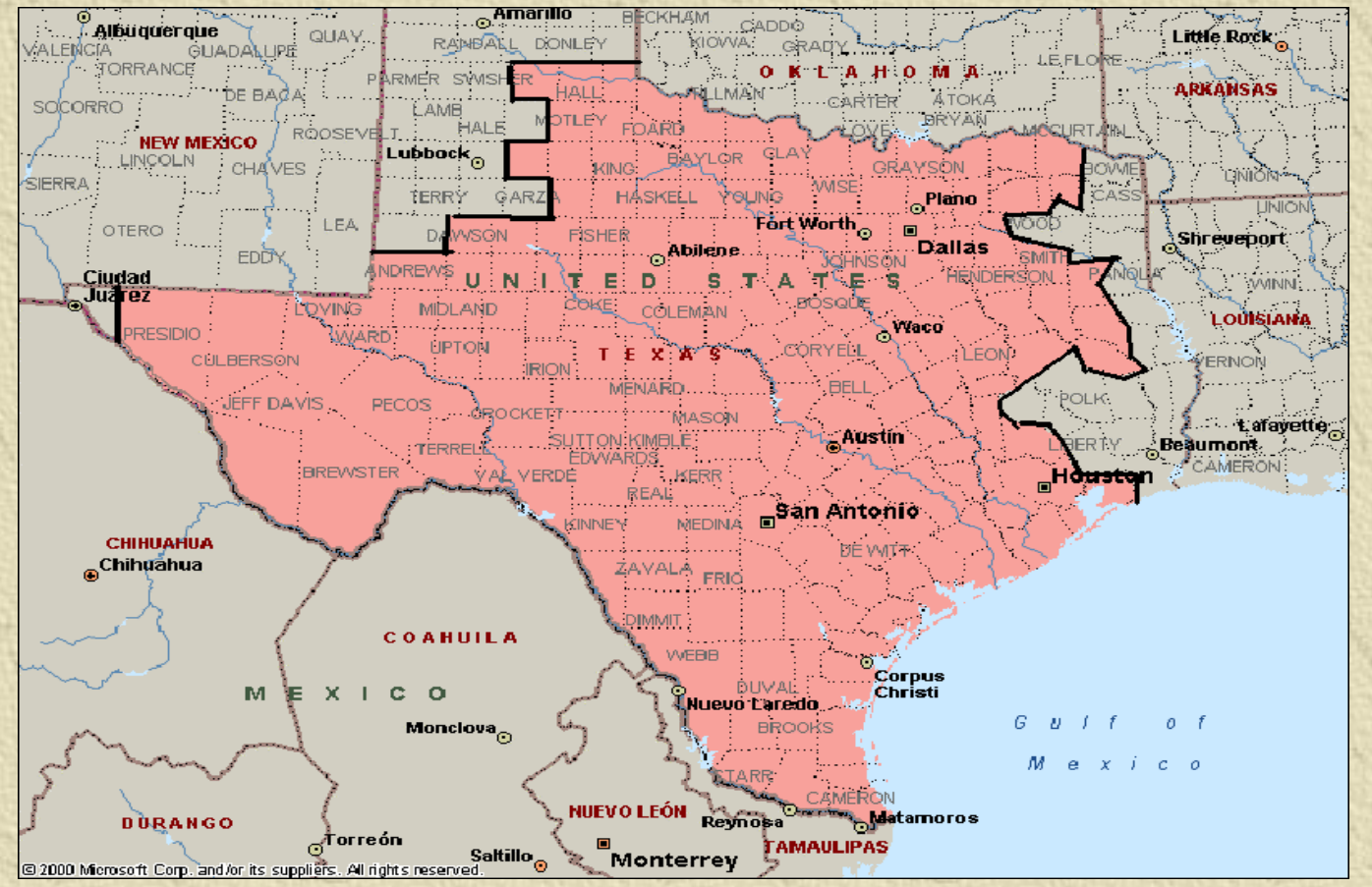
The challenge:

- integrating air quality and energy efficiency
- SIP credit
  - *requires quantification of benefits and*
  - *allocation of emission reductions geographically*

Agency partnership

- Texas Natural Resource Conservation Commission
- Texas Public Utility Commission
- State Energy Conservation Office
- Electric Reliability Council of Texas
- U.S. Environmental Protection Agency

ERCOT Region



Methodology Overview:

- The inputs are the amount of expected energy savings (kWh) in 2007 for each service territory.
- The outputs are an estimate of the emission reductions at each plant within the ERCOT region, which can be summed for each county

Methodology:

1. Estimate the amount of electricity generation that would be curtailed in each service area for a given amount of electricity demand savings in a particular service area
2. Estimate the amount of generation from each plant that would be curtailed for a given amount of generation curtailment in a particular service area.

Methodology continued

3. Combine information from the first two steps together to estimate the electricity generation reductions from each plant in the ERCOT region for a given amount of electricity demand reduction occurring in a particular service area
4. Apply plant specific emission factors to the curtailed generation at each plant
5. Cumulate the annual emission reductions at each location into county-wide totals

Next Steps:

- Explore the feasibility of developing a trading program for energy efficiency and renewable energy
- Encourage private investment in EE and RE

Issues

- Allocation of the credit for investment
- Trading program for multiple pollutants: NOx, SO2, CO, CO2
- The challenge of Houston Cap and Trade
- Renewable technologies are not necessarily zero emission technologies, (e.g. fuel cells)
- EPA trading rules